REMARKS

Claims 1-31 are pending in the application. Claims 1, 14, 21 are independent claims. All claims stand rejected. In response, Claims 5 and 19 have been cancelled and Claims 1, 2, 6, 7, 9, 11-14, 20, and 21 have been amended to more clearly claim the Applicants' invention. New Claims 86-89 have also been added to the application. Reconsideration and further examination are respectfully requested.

Claim Rejections under 35 U.S.C. § 112, second paragraph

Claims 1-13 have been rejected under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential elements. In response, Claim 1 has been amended to replace "an image position" with "a first position."

Reconsideration of the rejections under 35 U.S.C. § 112, second paragraph is respectfully requested.

Claim Rejections under 35 U.S.C. § 102(e)

Claims 1-20 have been rejected under 35 U.S.C. § 102(e) based on U.S. 6,232,937 to Jacobsen et al. The rejections are traversed.

As recited in Claims 1 and 14, the Applicant's claim a method of writing an image to an active matrix display, flashing a light source to illuminate the display, detecting the ambient light level with a sensor, and adjusting the brightness of the light source for the flashing. The adjusted brightness is dependent on the detected ambient light level. In certain embodiments, as claimed in new Claims 86 and 87, the method also includes detecting the brightness of the light source and generating a brightness signal based on the brightness, comparing the brightness signal to an intensity signal with a feedback controller, and producing an output signal for the light source with the feedback controller. The feedback controller adjusts the output signal so that the brightness signal matches the intensity signal.

We agree that Jacobsen discusses a method that writes an image to a display with a plurality of pixel electrodes, and flashes a light source to illuminate the display. The current to the light source can be varied by a user to adjust the intensity of the color of the light source. (*See*, e.g., col. 12, lines 63-67). From this, the Office Action states that Jacobsens' light source has an inherent intensity that is varied dependent on the ambient light level.

While Jacobsens' display may allow a user to vary the intensity of the light source based on the ambient level perceived by the user, that is not the same as the Applicants' feedback mechanism that detects the ambient light level with a sensor and adjusts the brightness level of the light source based on the detected ambient light level. In short, the perception of a user cannot be construed as detecting the ambient light level with a sensor.

Accordingly, Jacobsen does not teach a method that includes writing an image to an active matrix display, flashing a light source to illuminate the display, detecting the ambient light level with a sensor, and adjusting the brightness of the light source for the flashing, as recited in amended Claims 1 and 14. Thus, the rejections of Claims 1 and 14 under 35 U.S.C. § 102(e) are therefore overcome.

Because Claims 2-4 and 6-13 depend from Claim1, and Claims 15-18 and 20 depend from Claim 14, the reasons for allowance of Claims 1 and 14 apply as well to these dependent claims.

Reconsideration of the rejections under 35 U.S.C. § 102(e) is respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 21-31 have been rejected under 35 U.S.C. § 103(a) based on Jacobsen.

The Applicants'active matrix liquid crystal display, as claimed in amended Claim 21, includes an active matrix circuit with array of transistor circuits connected to respective pixel electrode, an integrated circuit display controller that instructs the active matrix circuit to actuate

the pixel electrodes to present an image on the display, a light source that illuminates the image presented on the display, a sensor that detects the ambient light level, and a brightness controller connected to the sensor for adjusting the brightness of the light source based on the detected ambient light level. Such an ambient light level sensor adjusts the brightness level automatically as the ambient light level changes, for example, between day and night.

As indicated above, Jacobsens' display allows a user to manually vary the light source intensity to a level desired by the user. Thus, in effect, the ambient light level in Jacobsens' display is detected by the user and not by a sensor.

Without a sensor that detects the ambient light level, Jacobsens' display cannot include the claimed brightness controller connected to the sensor that adjust the intensity level of the light source based on the ambient light level detected by the sensor, as recited in amended Claim 21. Moreover, because Jacobsens' display does not automatically adjust the intensity level of the light source as the ambient light level changes between night and day, there is no motivation to modify Jacobsens' display with the claimed sensor and brightness controller.

Accordingly, the rejection of Claim 21 under 35 U.S.C. § 103(a) is therefore overcome.

Because Claims 22-31 depend from Claim 21, the reasons for allowance of Claim 1 apply as well to Claims 22-31.

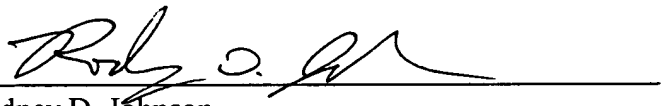
Reconsideration of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney at (978) 341-0036.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

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Dated: December 5, 2002

MARKED UP VERSION OF AMENDMENTS

Claim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

1. (Amended) A method of displaying an image on a liquid crystal display having a plurality of pixel electrodes comprising [the steps of]:

[providing a liquid crystal display having a plurality of pixel electrodes;]

writing an image to the display such that the liquid crystal moves to [an image] a first position;

flashing a light source to illuminate the display;

setting the pixel electrodes to orient the liquid crystal to a second position; [and]

repeating the writing, flashing, and setting [steps] to produce a sequence of images;

detecting the ambient light level with a sensor; and

adjusting the brightness of the light source for the flashing, the brightness being dependent on the detected ambient light level.

2. (Amended) The method of claim 1 wherein the image is a color image and the writing of the image is associated with color light that is flashed after the writing, [and] the [steps of] writing, flashing, and setting [are] being repeated for a plurality of colors.

6. (Amended) The method of claim 4 comprising [the step of] switching the voltage of the counterelectrode after each flashing of the light source and prior to the next writing of the image.

7. (Amended) The method of claim 6 wherein the writing of the image to the display by setting the voltage to each pixel electrode is done sequentially starting at one corner of the image and progressing until ending in the opposite corner.

9. (Amended) The method of claim 7 further comprising [the step of] waiting a settling time to allow the liquid crystal to twist between the writing of the last pixel and the flashing of the light source.

11. (Amended) The method of claim 3 wherein the [step of] writing an image to the display is accomplished by writing to one pixel electrode at a time.

12. (Amended) The method of claim 3 wherein the [step of] writing an image to the display is accomplished by writing to a plurality of pixel electrodes simultaneously.

13. (Amended) The method of claim 3 further comprising [the step of] monitoring the power to the microdisplay and initializing a process to discharge [the] a storage capacitor of the pixels to zero when the power drops below a certain level to the display.

14. (Amended) A method of displaying an image on a liquid crystal display having a plurality of pixel electrodes comprising [the steps of]:

[providing a liquid crystal display having a plurality of pixel electrodes;]

writing an image to the display therein causing the liquid crystal to move to a specific image position;

flashing a light source to illuminate the display;

switching the voltage of the counterelectrode;

setting the pixel electrodes to a specific value to cause the liquid crystal to move towards a desired position; [and]

repeating the writing, flashing, switching, and setting to produce an image;

detecting the ambient light level with a sensor; and

adjusting the brightness of the light source for the flashing, the brightness being dependent on the detected ambient light level.

20. (Amended) The method of claim 16 further comprising [the step of] monitoring the power to the microdisplay and initializing a process to discharge the storage capacitor of the pixels to zero when the power drops below a certain level to the display.

21. (Amended) An active matrix liquid crystal display comprising:

an active matrix circuit having an array of transistor circuits formed in a first plane, each transistor circuit being connected to a pixel electrode in an array of pixel electrodes [having an area of 200 mm^2 or less];

an integrated circuit display controller connected to the active matrix circuit, the controller including a read memory, a write memory and a timing control circuit, the controller instructing the active matrix circuit to actuate the pixel electrodes to present an image on the display;

a counterelectrode panel extending in a second plane that is parallel to the first plane, such that the counterelectrode panel receives an applied voltage; [and]

a liquid crystal layer interposed in a cavity between the two planes;

a light source that illuminates the image presented on the display;

a sensor that detects the ambient light level; and

a brightness controller connected to the sensor, the brightness controller adjusting the brightness of the light source based on the detected ambient light level.

25. (Amended) The active matrix liquid crystal display of claim 24 wherein the writing of the image to the display by setting the voltage to each pixel electrode is done sequentially starting at one corner of the image and progressing until ending in the opposite corner.